Hydrodeoxygenation of phenol over Pd catalysts by in-situ generated hydrogen from aqueous reforming of formic acid - DTU Orbit (09/11/2017)

Hydrodeoxygenation of phenol over Pd catalysts by in-situ generated hydrogen from aqueous reforming of formic acid

Hydrodeoxygenation of phenol, as model compound of bio-oil, was investigated over Pd catalysts, using formic acid as a hydrogen donor. The order of activity for deoxygenation of phenol with Pd catalysts was found to be: Pd/SiO_2 > Pd/MCM-41 > Pd/CA > Pd/Al_2O_3 > Pd/HY approximate to Pd/ZrO_2 ≈ Pd/CW > Pd/HSAPO-34 > Pd/HZSM-5. The good performance of Pd/SiO_2 is owing to its proper pore structure and large specific surface area. The high level of Bronsted acid sites in SiO2 also favors the deoxygenation of phenol. (C) 2016 Elsevier B.V. All rights reserved.

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